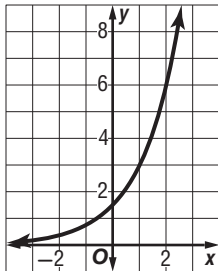


7-1 Practice**Graphing Exponential Functions**

Graph each function. State the domain and range.

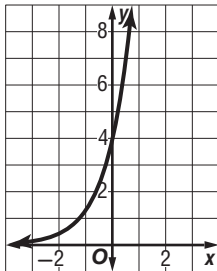
1. $y = 1.5(2)^x$



$$D = \{\text{all real numbers}\};$$

$$R = \{y | y > 0\}$$

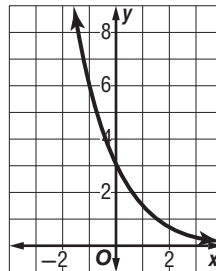
2. $y = 4(3)^x$



$$D = \{\text{all real numbers}\};$$

$$R = \{y | y > 0\}$$

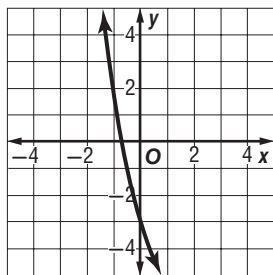
3. $y = 3(0.5)^x$



$$D = \{\text{all real numbers}\};$$

$$R = \{y | y > 0\}$$

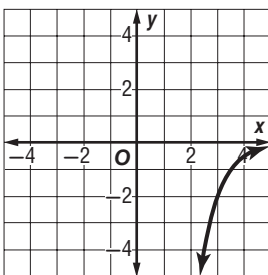
4. $y = 5\left(\frac{1}{2}\right)^x - 8$



$$D = \{\text{all real numbers}\};$$

$$R = \{y | y > -8\}$$

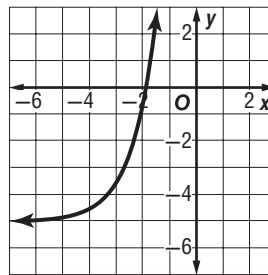
5. $y = -2\left(\frac{1}{4}\right)^{x-3}$



$$D = \{\text{all real numbers}\};$$

$$R = \{y | y < 0\}$$

6. $y = \frac{1}{2}(3)^{x+4} - 5$



$$D = \{\text{all real numbers}\};$$

$$R = \{y | y > -5\}$$

7. **BIOLOGY** The initial number of bacteria in a culture is 12,000. The culture doubles each day.

- a. Write an exponential function to model the population y of bacteria after x days.

$$y = 12,000(2)^x$$

- b. How many bacteria are there after 6 days? **768,000**

8. **EDUCATION** A college with a graduating class of 4000 students in the year 2008 predicts that its graduating class will grow 5% per year. Write an exponential function to model the number of students y in the graduating class t years after **$y = 4000(1.05)^t$**